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IN THE CLAIMS:

1. (Currently Amended) A protective composite sleeve material for a microwave reaction vessel, said sleeve material consisting essentially of:

a chemically inert outer layer;

a microwave-transparent circumferentially wound cylindrical layer of contiguous yarns fixed with a first polymer layer on the outer surface of said wound layer; and

a pressure-resistant inner layer on the opposite surface of said wound layer from said first polymer layer, said inner layer consisting essentially of a chemically-inert pressure-resistant structural polymer;

wherein said outer and inner layers are formed of tetrafluoroethylene polymer.

2 - 4. (Cancelled)

5. (Currently Amended) A composite sleeve material according to ~~Claim 4~~ Claim 1 wherein said first structural polymer comprises a polyimide resin.

6. (Cancelled)

7. (Currently Amended) ~~A composite sleeve material according to Claim 4~~ A protective composite sleeve material for a microwave reaction vessel, said sleeve material consisting essentially of:

a chemically inert outer layer;

a microwave-transparent circumferentially wound cylindrical layer of contiguous yarns fixed with a first polymer layer on the outer surface of said wound layer;

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a pressure-resistant inner layer on the opposite surface of said wound layer from said first polymer layer, said inner layer consisting essentially of a chemically-inert pressure-resistant structural polymer; and

~~and further comprising~~ at least one additional textile layer and one additional structural polymer layer between said first structural polymer layer and said inert outer layer.

8. (Original) A composite sleeve material according to Claim 7 wherein said additional textile layer is selected from the group consisting of wound filaments, wound yarns, woven fabric, braided fabric, nonwoven fabric, and knitted fabric.

9 - 12. (Cancelled)

13. (Currently Amended) A composite sleeve according to Claim ~~10~~ 38 further comprising a plurality of pairs of adjacent concentric layers of structural polymer and textiles between said ~~inner and outer~~ first and inner polymeric layers.

14. (Original) A composite sleeve according to Claim 13 wherein said textile layers in said pairs are selected from the group consisting of woven fabrics, braided fabrics, nonwoven fabrics, and knitted fabrics.

15. (Original) A composite sleeve according to Claim 13 wherein said textile layers in said pairs comprise a winding selected from the group consisting of filaments and yarns.

16 - 35. (Cancelled)

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36. (Previously presented) A protective composite sleeve material according to Claim 1 wherein said yarns are selected from the group consisting of filament and spun yarns.

37. (Cancelled)

38. (Previously presented) A protective composite sleeve and vessel assembly for microwave assisted chemistry, said assembly consisting essentially of:

a sleeve formed of a microwave-transparent circumferentially wound cylindrical layer of contiguous yarns fixed with a first polymer layer on one surface of said wound layer, and a chemically-inert pressure-resistant structural polymeric inner layer on the opposite surface of said wound layer from said first polymer layer; and

a microwave-transparent pressure resistant reaction cylinder surrounded by said sleeve.

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